

The Composable Enterprise

Engineering Adaptability at Scale
Through Human-AI Synergy

Research by Everest Group | Sponsored by Encora

About This Research

This research report by Everest Group, sponsored by Encora, explores how organizations can build composable enterprises powered by human-AI collaboration. Through analysis of enterprise architecture patterns, AI integration frameworks, and engineering maturity models, this Viewpoint provides leaders with a roadmap to balance speed with trust and technology with purpose in an era of continuous disruption.

Why Composability Matters Now

Organizations face relentless pressure from emerging competitors, shifting customer expectations, and operational disruptions. What separates resilient enterprises from those that struggle is their ability to adapt through rapid reconfiguration of existing capabilities, not massive reinventions.

Enterprise composability transforms organizations into dynamic systems built from modular components that can be reassembled on demand. But true flexibility requires more than cloud-native architecture. It demands a partnership between humans and AI, where machine precision combines with human judgment, creativity, and context.

Key Findings

1. Composability Enables Structural Agility

Organizations are treating business functions, data products, and intelligent services as modular building blocks (Packaged Business Capabilities or PBCs)

- **Functional PBCs** handle operations (order management, billing, KYC)
- **Data Product PBCs** provide intelligence (Customer 360, inventory snapshots)
- **AI/Decision PBCs** automate judgment (fraud detection, demand forecasting)

This approach enables faster product launches, smoother acquisitions, and innovation without dismantling the core.

2. The Human-AI Decision Fusion Equation

The Human-AI Decision Fusion Equation demonstrates that optimal decisions result from human judgment, AI precision, contextual clarity, and the "fusion spark" of intentional collaboration. Different decisions require different models:

- **Routine:** Full AI automation with human exception handling
- **Operational:** AI recommendations with human validation
- **Analytical:** AI forecasting with human interpretation
- **Strategic:** AI evidence synthesis with human vision and ethical judgment

3. Engineering Maturity Follows a Pragmatic Path

Organizations evolve through four stages: Monolithic Delivery → API-First + Modular Monolith → Targeted Service Modularization → Composable, Intelligent, Governed Platform. Digital-first organizations can leapfrog early stages, building composability from day one.

4. Nexus Teams Bridge Business and Technology

Cross-functional nexus teams unite business strategy, engineering, data science, and governance with embedded AI. These persistent pods create enterprise-ready assets (APIs, workflows, data products, and intelligent services) that can be reused across the organization.

5. Data Quality Is the Strategic Differentiator

Leading enterprises differentiate by curating data for context, separating truth from misinformation, and turning data into living assets. The future will be split not by who uses AI, but by who controls quality data.

Strategic Implications



For Technology Leaders

Engineers must design capabilities as modular, reusable assets with clear boundaries, standardized interfaces, embedded governance, and safe evolution paths.



For Business Leaders

Speed and resilience come from orchestrating existing capabilities into new value flows. Modular systems enable faster launches, smoother acquisitions, and continuous innovation.



For Enterprise Leaders

Winners will master five interconnected capabilities: resilience through composability, adaptability at scale, human-AI collaboration, proactive change anticipation, and purpose-driven alignment.

Essential Success Factors

Embed Trust Into Every Layer

Governance must be woven into engineering workflows through DevSecOps, MLOps, SRE practices, and human oversight at critical decision points.

Balance Innovation With Reliability

Responsible engineering practices (progressive delivery, bias testing, explainability, error budgets) allow enterprises to move fast confidently.

Anchor Technology in Purpose

Purpose-driven enterprises attract talent, build stakeholder trust, and sustain momentum through disruption.

The Path Forward

Organizations that master weaving modular capabilities with responsible AI (anchored by governance and purpose) will unlock compounding strength: faster and wiser decisions, resilient and adaptive processes, and scalable and ethical innovations.

Composability is no longer a technology choice. It is a strategic imperative to engineer adaptability at scale through human-AI synergy.



Explore detailed methodologies, engineering roadmaps, and governance frameworks in the complete report.

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